

KOVTUN, D.G., kand.fiz.-matem.nauk, dotsent

Machine calculation and design for smoothness of railroad curves.  
Vest.TSNII MPS 21 no.3:56-57 '62. (MIRA 15:5)

1. Khar'kovskiy institut inzhenerov zheleznodorozhnogo transporta.  
(Railroads—Curves and turnovers)

KOVFUN, D.G., kand.fiz.-matem.nauk, dotsent

Bases of programing the smoothness projection of railroad curves.  
Trudy KHIIT no.41:11-28 '61. (MIRA 15:2)  
(Railroads--Curves)

KOVTUN, F. K.

23509

FOR MIROVANIYe I ISPOL'ZOVANIYe MNOGOMATOChNYKh SEMEY.  
PChELOVODSTVO, 1949, No. 7, G. 29-30.

SO: LETOPIS' NO. 31, 1949

KOVTUN, F. N.

Bee Culture

Productivity of colonies with more than one queen. Pchelovodstvo, 29, No. 7, 1952.

Monthly List of Russian Accessions, Library of Congress, October 1952. UNCLASSIFIED.

KOVTUN, F. N.

Bee Culture

Transporting bees in closed hives. Pchelovodstvo 29 No. 8, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952. UNCLASSIFIED.

KOVTUN, F.N.

Increasing the productivity of the S-251 mortar pump made by  
the Prilukskii Factory. Rats. i izobr. predl. v stroi. no.106:  
6-7 '54. (MIRA 8:10)

(Plastering)

KOVTUN, G.

Device for heating truck windshields. Avt.transp. 34 no.9:30 S '56.

(Motortrucks--Windows and windshields)

(MLEA 9:11)

KOVTUN, G.

The accident was stopped. Pozh.delo 7 no.7:28 J1 '61.

(MIRA 16:11)



KOVTUN, G.I.; KOL'NIKOV, B.N.

Modernization of apparatus for the electrostimulation of muscles.  
Med.prom. 14 no.6:51-53 Je '60. (MIRA 13:6)

1. Moskovskiy zavod elektromeditsinskoy apparatury.  
(ELECTROPHYSIOLOGY)

I. 17019-66

ACC NR: AP6006346

SOURCE CODE: UR/0413/66/000/002/0070/0070

INVENTOR: Kovtun, G. I.; Neumyvakin, I. P.

ORG: none

TITLE: Sensor for recording respiration. Class 30, No. 178026

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 70

TOPIC TAGS: human respiration, respiratory sensor, human physiology

ABSTRACT: An Author Certificate has been issued for a respiration sensor. It consists of a fan with a built-in permanent magnet on its shaft and an inductance coil with a core. To increase the reliability of separately recording the inhale and exhale

Card 1/2

UDC: 612.21—087:621.38

L 17019-66

ACC NR: AP6006346

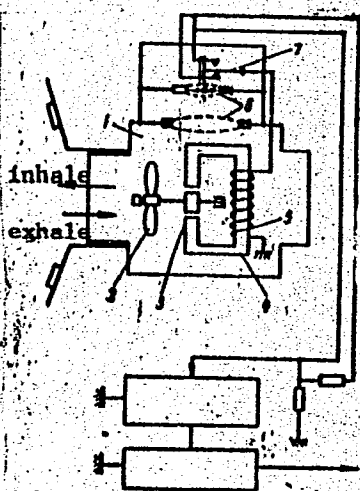


Fig. 1. Sensor for recording respiration.

- 1 - Operating chamber; 2 - fan; 3 - permanent magnet; 4 - core; 5 - coil;
- 6 - rubber diaphragms; 7 - switch.

phases, it is equipped with two rubber diaphragms of different sizes, with an electric switch attached to the smaller one (see Fig. 1). Orig. art. has: 1 figure. [CD]

SUB CODE: 06/ SUBM DATE: 10Nov64/ ATD PRESS: 4207

Card 2/2 *MGS*

KOVTUN, G.P. [Kovtun, H.P.]; KRUGLYKH, A.A. [Kruhlykh, A.A.];  
PAVLOV, V.S.

Determining the vapor pressure in metals from the vaporization  
rate. Ukr. fiz. zhur. 6 no.3:386-389 My-Je '61.

(MIRA 14:8)

1. Fiziko-tekhnicheskii institut AN USSR, g. Khar'kov.  
(Vapor pressure)

S/185/62/007/003/014/015  
D299/D301

AUTHORS: Kovtun, H.P., Kruhlykh, A.A. and Pavlov, V.S.  
TITLE: On determining the vapor pressure of metals by the rate of evaporation from a cylindrical crucible  
PERIODICAL: Ukrayins'kyi fizychnyy zhurnal, v. 7, no. 3, 1962, 336 - 337

TEXT: The dependence of the rate of evaporation on the ratio of the length  $l$  to the diameter  $d$  of the crucible, was investigated for silver ( $\alpha = 0.15$ ) and chromium ( $\alpha = 0.5$ );  $\alpha$  is the coefficient of evaporation. Molybdenum crucibles were used, with different  $l/d$ . From a formula, obtained by the authors in an earlier investigation, it follows that if the ratio  $l/d$  is sufficiently large, the vapor pressure can be determined by the formula

$$P = \frac{G}{S \cdot K} \sqrt{\frac{2 \pi R T}{M}}.$$

(2)

Card 1/3

On determining the vapor pressure ... S/185/62/007/003/014/015  
D299/D301

where  $G$  is the rate of evaporation,  $S$  -- the evaporation surface and  $K$  -- Clausius's coefficient. A figure shows the dependence of the rate of evaporation on  $l/d$ . It was found that, from a certain value of  $l/d$  on, the rate of evaporation changes only insignificantly at constant temperature. There exists, for various metals, a certain ratio  $l/d$ , for which the vapor pressure is expressed by formula (2). For chromium, this value is  $l/d \approx 8.5$ . In order to verify this assumption, the vapor pressure of chromium was measured at temperatures of 1200 - 1350°C. The evaporation took place simultaneously from 2 cylindrical crucibles, with  $l/d = 8.5$  and  $l/d = 4.5$ , respectively. The rate of evaporation was found to be practically equal in both the long- and the short crucible. A figure shows the temperature dependence of the vapor pressure, calculated by the rate of evaporation from the crucibles with  $l/d = 8.5$ . By processing the results by the method of least squares, the following equation for the vapor pressure of chromium in the temperature range of 1200-1350°C is obtained:  $\lg P = 10.890 - 20830/T$ , which is in good agreement with the results of other investigators. There are 2 figures, 1 table and 5 refer-

Card 2/3

On determining the vapor pressure ... S/185/62/007/003/014/015  
D229/D301

ences: 4 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English language publication reads as follows: M.G. Rossman, J. Jarwood, J. Appl. Phys., 5, 7, 1954.

ASSOCIATION: Fizyko-tekhnichnyy instytut AN URSR (Physicotechnical Institute of the AS UkrRSR), Kharkiv

SUBMITTED: December 1, 1961

Card 3/3

37190  
S/185/62/007/004/014/018  
D407/D301

18.1.50

AUTHORS:

Kovtun, <sup>G.</sup> P., Kruhlykh, A. A., and Pavlov, V. S.

TITLE:

Vapor pressure and evaporation coefficient of nickel

PERIODICAL:

Ukrayins'kyy fizychnyy zhurnal, v. 7, no. 4, 1962, 436-437

TEXT: The vapor pressure and the coefficient of evaporation of nickel were determined by the method of evaporation from a cylindrical crucible and by Knudsen's effusion method. The first method was described in an earlier work by the authors. Thereby, the vapor pressure was calculated by the formula

$$P = \frac{G}{S} \left[ \frac{1}{K} - 1 + \frac{1}{\alpha} \right] \sqrt{\frac{2 \pi R T}{M}},$$

Card 1/3

X



S/185/62/007/004/014/018  
D407/D301

Vapor pressure and...

where  $G$  is the rate of evaporation,  $S$ --the evaporation surface,  $K$ --Clausing's coefficient, and  $\alpha$ --the coefficient of evaporation. No appreciable changes in the rate of evaporation were observed during the evaporation of nickel from cylindrical crucibles with different  $K$ . Therefore, the vapor pressure of nickel was measured, in the temperature range 1190 - 1355°C, on the assumption that  $\alpha = 1$ . The experimental data, processed by the method of least squares, yielded the following formula for the vapor pressure of nickel:

$$\lg P = 10.562 - \frac{22360}{T}$$

This formula is in good agreement with the results of other investigators. In order to verify the above results, Knudsen's method was used. Thereby, the nickel was evaporated from effusion chambers with two different sizes of aperture. In this case, too, no appreciable changes in the rate of evaporation were

Card 2/3

KOVTUN, G.P.

IVANOV, V.YE., KRUGLYKH, A.A., PAVLOV, V.S., KOVTUN, G.P. AND ARBONENKO, V.M.

"Measurement of the vapor pressure of uranium containing compounds."

Report presented at the IAEA Symposium on the Thermodynamics of Nuclear  
Materials.  
Vienna, Austria 21-26 May 1962

KOVTUN, G.P. [Kovtun, H.P.]; KRUGLYKH, A.A. [Kruhlykh, A.A.]; PAVLOV, V.S.

Determination of metal vapor elasticity by the rate of evaporation  
from a cylindrical crucible. Ukr.fiz.zhur. 7 no.3:336-337  
Mr '62. (MIRA 15:7)

1. Fiziko-tehnicheskii institut AN USSR, g. Khar'kov.  
(Metals, Effect of temperature on)  
(Evaporation)

KOVTUN, G.P. [Kovtun, H.P.]; KRUGLYKH, A.A. [Kruhlykh, A.A.]; PAVLOV, V.S.

Vapor pressure and the evaporation coefficient of nickel. Ukr.  
fiz.zhur. 7 no.4:436-438 Ap '62. (MIRA 15:8)

1. Fiziko-tekhnicheskii institut AN UkrSSR, g. Khar'kov.  
(Nickel) (Vapor pressure)

AMONENKO, V.M.; KOVTUN, G.P.; KRUGLYKH, A.A.; PAVLOV, V.S.

Absorption of air by aluminum oxide. Ukr. khim. zhur. 29  
no.10:1109-1110 '63. (MIRA 17:1)

1. Khar'kovskiy fiziko-tekhnicheskiiy institut AN UkrSSR.

ACCESSION NR: AP4033131

S/0120/64/000/002/0130/0132

AUTHOR: Kovtun, G. P.; Krugly\*kh, A. A.; Pavlov, V. S.

TITLE: Electron-beam gun for determining rate of evaporation of low-volatility materials

SOURCE: Pribery\* i tekhnika eksperimenta, <sup>9</sup>no. 2, 1964, 130-132

TOPIC TAGS: electron beam gun, low volatility, low volatility material, vaporization rate, evaporation rate

ABSTRACT: Unlike J. Pierce's ideal system (J. Appl. Phys., 1940, 11, 548), the gun described in the present article has both cathode and anode in the form of two semiplanes at an angle of  $135^{\circ}$ . Three guns (see Enclosure 1) have a common anode 1 and separate cathodes 2 with moly lead-ins 3. Slits 4 (55x5 mm) serve to pass the electron beams, while slit 5 (40x6 mm) is intended for viewing. Channels 6 pass cooling water. Max electron current, 1-1.5 amp

Cord: 2  
1/2

ACCESSION NR: AP4033131

at 8-10 kv. Specimens of up to 8x30 mm are acceptable. Tungsten and graphite specimens were heated up to 3,000C. The gun is recommended for studying the evaporation rate, vapor pressure, recrystallization, cyclic thermal treatment, and other high-temperature problems. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR (Physico-Technical Institute, AN UkrSSR)

SUBMITTED: 30May63

DATE ACQ: 11May64

ENCL: 01

SUB CODE: PH

NO REF SOV: 000

OTHER: 003

Card

2/2

ACCESSION NR: AP4029844

S/0279/64/000/002/0177/0179

AUTHOR: Kovtun, G. P. (Khar'kov); Krugly\*kh, A. A. (Khar'kov); Pavlov, V. S. (Khar'kov)

TITLE: Vapor pressure of solid beryllium

SOURCE: AN SSSR Izv. Metallurgiya i gornoye delo, no. 2, 1964, 177-179

TOPIC TAGS: vapor pressure, beryllium, evaporation, Langmuir method, Knudsen method, sublimation

ABSTRACT: Since the purity and technology of beryllium have been improved, it has become necessary to know the temperature dependence of vapor pressure for the purest types. The authors have determined the vapor pressure of beryllium the over-all purity of which considered non-metallic impurities at not less than 99.95%. The Fe, Si, Al, Cr, and Ni impurities did not exceed 0.001% for each component. The calculation for the vapor pressure was conducted by the following formula (using Knudsen's method)

$$P = \frac{G}{K} \sqrt{\frac{2\pi RT}{M}} \quad (1)$$

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ACCESSION NR: AP4029844

in Langmuir's method

$$P = \frac{G}{\alpha} \sqrt{\frac{2\pi RT}{M}}$$

(2)

where P is the vapor pressure, G is the vaporization rate; K is Clausing's coefficient  
 $\alpha$  is the vaporization coefficient. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 13Jul63

DATE ACQ: 30Apr64

ENCL: 00

SUB CODE: ML

NO REF SOV: 000

OTHER: 003

Card 2/2

L 15367-65 ENT(m)/EPT(s)/SWP(b) Pr-4 SSD(ss)/SSD/APWT/APTC(m) JD/  
 ACCESSION NR. AP4048866 JW/30 S/0185/64/009/010/1089/1091

AUTHOR: Kovtun, G. P.; Krugly\*kh, A. A.; Pavlov, V. S.

TITLE: Vapor pressure of gadolinium and dysprosium

SOURCE: Ukrayins'ky'y fizy\*chiny'y zhurnal, v. 9, no. 10, 1964, 1089-1091

TOPIC TAGS: gadolinium, dysprosium, vapor pressure, heat of sublimation, entropy of sublimation

ABSTRACT: The pressure of gadolinium and dysprosium vapor was determined over the temperature intervals of 1120-1310C and 850-1075C respectively, using Knudsen's effusion method, by the difference of the weight of the tantalum effusion cell before and after the experiment. The following equations describe the results obtained for Gd and Dy, respectively:  $\log P \text{ mm Hg} = 12.03 - 23705/T$ , and  $\log P \text{ mm Hg} = 0.79 - 15825/T$ . The heats of sublimation were calculated: 108.5 and 72.4 kcal/mole for Gd and Dy, respectively. The respective entropies of sublimation equal 42.0 and 31.6 cal/mole, degree. Orig. art. has: 2 tables, 1

Card 1/2

L 16367-65

ACCESSION NR: AP4048866

figure and 5 equations

ASSOCIATION: Fizyko-tekhnichnyy instytut AN URSR m. Kharkov (Physical  
Technical Institute AN URSR)

SUBMITTED: 20Jan64

ENCL: 00

SUB CODE: GC, IC

NO REF SOV: 001

OTHER: 003

Card 2/2

L 51443-65 EPA(a)-2/EWT(m)/EPT(p)-2/ETP(t)/EWP(b) Pt-7/Pu-4 YJP(c)  
 JD/VV/JW/30  
 ACCESSION NH: AP5011069 UR/0185/65/010/004/0432/0435  
 AUTHOR: Kruglykh, A. A. (Kruglykh, A. A.); KORTUN, G. F. (Kortun, G. F.); Pavlov,  
 V. S.  
 TITLE: Saturated vapor tension of erbium, samarium, and ytterbium  
 SOURCE: Ukrayins'kyi fizychnyy zhurnal, v. 10, no. 4, 1965, 432-435  
 TOPIC TAGS: vapor tension, erbium, samarium, ytterbium, rare earth element, effe-

ABSTRACT: Continuing an earlier investigation of the vapor tension of gadolinium and dysprosium (Ukr. fizykh. zh. v. 9, no. 10, 1964) the authors determine the saturated vapor tension of erbium, samarium, and ytterbium in the temperature ranges 915-1180, 484-721, and 390-1050 respectively by the Knudsen effusion method, in which the difference between the weights of the effusion cell before and after the experiment is determined. The effusion chamber and the oven used to heat it are shown in Fig. 1 of the Enclosure. The experimental results fit well the following equations:  $\log P_{\text{mm}} = 6.9 - (13030/T)$ ,  $\log P_{\text{mm}} = 7.4 - (8703/T)$ ,  $\log P_{\text{mm}} =$

Card 1/3

L 51443-65

ACCESSION NR: AP5011069

$\Delta H_{sub} = 8.5 - (7745/T)$  for erbium, samarium, and ytterbium respectively. The sublimation heat of erbium, samarium, and ytterbium were determined on the basis of these equations to be 60.53, 39.8, and 37.4 kcal/mol respectively. The respective sublimation entropies are 18.4, 20.7, and 25.6 cal/mol-deg. Orig. art. has: 2 figures, 2 formulas, and 5 tables.

ASSOCIATION: Fiziko-tekhnicheskyy Institut AN URSR, Kharkiv (Fiziko-tekhnicheskyy Institut AN URSR, Khark'kov) (Physicotechnical Institute AN URSR)

SUBMITTED: 11 Jun 64

ENCL: 01

SUB CODE: GP, TS

NR REP SOV: 002

OTHER: 003

51443-65  
ACCESSION NR: AF5011069

ENCLOSURE: 01

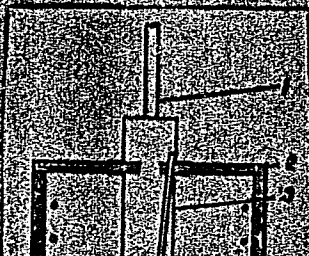


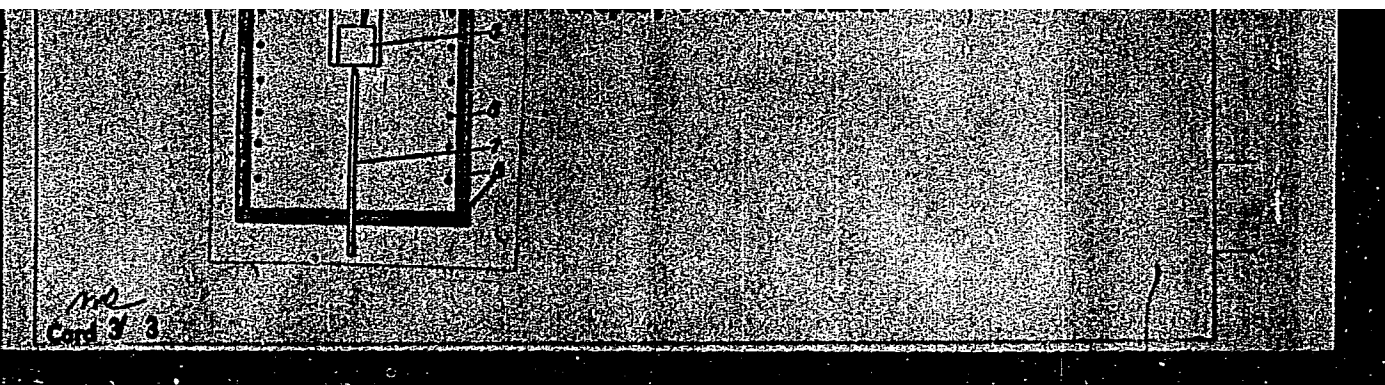
Fig. 1. Diagram of oven for effusion chamber

- 1 - Movable rod, 2 - oven cover with screens,
- 3 - container for effusion chamber, 4 -
- Pt-PtRh thermocouple, 5 - effusion chamber,



"APPROVED FOR RELEASE: Monday, July 31, 2000

CIA-RDP86-00513R000825710



APPROVED FOR RELEASE: Monday, July 31, 2000

CIA-RDP86-00513R000825710C

I. 27468-66 EWT(m)/EWA(d)/EWP(t) IJP(c) JD

ACC NR: AP6007844

SOURCE CODE: UR/0120/66/000/001/0211/0212

AUTHORS: Kovtun, G. P.; Kruglykh, A. A.; Pavlov, V. S.

ORG: Physicotechnical Institute AN UkrSSR, Khar'kov (Fiziko-  
tekhnicheskii institut AN UkrSSR)

TITLE: Apparatus for zone refining of refractory metals

SOURCE: Priory 1 tekhnika eksperimenta, no. 1, 1966, 211-212

TOPIC TAGS: refractory metal, electron beam melting, metal zone re-  
fining, molybdenum, metal ceramic material

ABSTRACT: The authors describe an electron-beam instrument with elec-  
trostatic beam focusing, intended for zone refining of refractory metals.  
The device employs three plane-parallel beams of electrons with radial  
cathodes and focusing electrodes (Fig. 1). The use of plane cathodes  
instead of annular cathodes eliminates contamination of the cathodes,  
prevents electric discharges, and prevents contamination of the refined  
sample. The focusing system for each electron beam consists of plane  
anode and cathode electrodes bent at  $135^\circ$ . Tests with metal-ceramic  
molybdenum rods up to 10 mm in diameter have shown that the rods could

Card

1/2

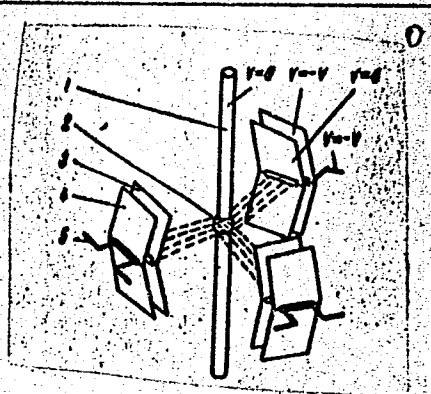
UDC: 58.553.6

L 27468-66

ACC NR.

AP6007844

Fig. 1. Operating principle of electron-beam gun. 1 -- Sample, 2 -- melting zone, 3 -- focusing anode, 4 -- focusing cathode, 5 -- electron source.



be subjected to zone refining without preliminary heating and, in spite of the considerable gas release, melting began without prior outgassing. Orig. art. has: 2 figures

SUB CODE: 13, 11/ SUBM DATE: 24Jan65/ ORIG REF: 002/ OTH REF: 003

Card

2/2 BKG

L 40023-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6019827 (N)

SOURCE CODE: UR/0370/66/000/001/0071/0072

AUTHOR: Kovtun, G. P. (Khar'kov); Kruglykh, A. D. (Khar'kov); D'yakov, I. G. (Khar'kov)

ORG: none

TITLE: Zone refining of molybdenum <sup>33</sup><sub>B</sub>

SOURCE: AN SSSR. Izvestiya. Metally, no. 1, 1966, 71-72

TOPIC TAGS: metal zone refining, molybdenum

ABSTRACT: The effect of certain parameters of zone recrystallization (speed of travel of the liquid zone, number of passes) on the degree of refining of molybdenum was studied. The metal purity was determined by measuring the ratio of the electrical resistance at room temperature to that at the temperature of liquid helium,  $\rho = R_{295^{\circ}\text{K}}/R_{420^{\circ}\text{K}}$ . The zone refining was done with a special electron-beam gun whose design is described. It was noted that the refining of molybdenum is due mainly to the vaporization of volatile impurities, and also to the mechanism of zone refining itself. The character of the distribution of impurities over the length of the specimen indicates that molybdenum contains many impurities with a distribution coefficient  $K < 1$ , such as carbon. A change in the speed of travel of the liquid zone from 1 to 5 mm/min does not appreciably affect the distribution of impurities along the specimen. Orig. art. has: 2 figures and 1 table.

SUB CODE: 11/ SUBM DATE: 07Jan65/ ORIG REF: 001/ OTH REF: 002

Card 1/1

UDC: 669.284

S/079/62/032/001/004/016  
D213/D302

AUTHORS: Pyatnova, Yu.B., Kovtun, I.A., Pleshakov, M.G., Krayevskiy, A.A., Sarycheva, I.K., and Preobrazhenskiy, N.A.

TITLE: Studies in the synthesis of poly-yne compounds

PERIODICAL: Zhurnal obshchey khimii, v. 32, no. 1, 1962, 138-139

TEXT: Methods of preparing decadi-yne-1,4, and tetradecatriyne-2,5 8-ol-1 are described. The above compounds are intermediates in the synthesis of arachidonic and other unsaturated acids. (1) Chlorobutyne-2-ol-1: Butyne-2-diol 1,4 was treated in pyridine and benzene ((1:1) mixture) at 3-5°C with excess  $\text{SOCl}_2$  (1.1 equiv.) with temperature being kept at 15-20°C. The yield was 60 %. (2) Octyne-2-ol-1: Prepared in 59 % yield from 1 chlorobutyne-2-ol-4, with n-butyl magnesium bromide, the former being added over 90 mins. The fraction of b.p. 98-100°C/16 mm was collected. (3) 1-Bromo-octyne-2: To octyne-2-ol-1 in dry ether kept at 0 - 2°C,  $\text{PBr}_3$  in slight excess and catalytic amounts of pyridine were added over 15 mins. The yield  
Card 1/2

Studies in the synthesis of ...

S/079/62/032/001/004/016  
D213/D302

was 80 %. (4) Decadiyne-1,4: 1 Bromooctyne-2 was reacted with Na acetylenide. The yield was 48 %. (5) Tetradecatriyne-2,5,8-ol-1: To a solution of excess ethyl magnesium bromide in dry ether with cooling to -3-5°C propargyl alcohol in benzene was added over 90 mins. There are 7 references: 3 Soviet-bloc and 4 non-Soviet-bloc. The references to the English-language publications read as follows: W.J. Bailey and E. Fujiwara, J. Am. Chem. Soc., 77, 165, 1955; W.J. Gensler, A.P. Mahadevan and J. Casella, J. Am. Chem. Soc., 78, 63, 1956; J.M. Osbond and J.C. Wickens, Chem. a. Ind., 1959, 1288.

ASSOCIATION: Moskovskoy Institut tonkoy khimicheskoy tekhnologii imeni M.V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M.V. Lomonosov)

SUBMITTED: January 25, 1961

Card 2/2

ZAPESOCHNAYA, G.G.; KOVTUN, I.A.; SARYCHEVA, I.K.; PREOBRAZHENSKIY, N.A.

Synthesis of 1,12-dodecanolide. Zhur.ob.khim. 33 no.7:2133-2136  
J1 '63. (MIRA 16:8)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni  
Lomonosova.

(Dodecanilide)

KOVTUN, I.G. [Kovtun, I.H.], kand.ekonom.nauk; KARPENKO, S.O., inzh.

Determining the economic effectiveness of new machinery. Mekh.  
sil'.hosp. 12 no.8:19-21 Ag '61. (MIRA 14:7)  
(Agricultural machinery)



KOVTUN, I.G. [Kovtun, I.H.], kand. ekonom. nauk; CHAYKOVSKIY, A.F.  
[Chaikovs'kyi, A.F.], otv. za vypusk; KVITKA, S.P., tekhn.  
red.

[Methodology for determining the economic efficiency of new  
machinery in agriculture] Metodyka vyznachenia ekonomichnoi  
efektyvnosti novoi tekhniki v sil's'komu hospodarstvi. Kyiv,  
Vyd-vo Ukrain's'koi Akad. sil's'kohospodars'kykh nauk, 1961.  
40 p. (MIRA 15:7)

1. Kiev. Ukrain's'ka Akademiia sil's'kohospodars'kykh nauk.  
Ukrains'kyi naukovo-doslidnyi instytut ekonomiky i organiza-  
tsii sil's'koho hospodarstva. 2. Chlen-korrespondent Ukrain-  
skoy akademii sel'skokhozyaystvennykh nauk (for Chaykovskiy).  
(Agricultural machinery)

KOVTUN, I.I.

Apparatus for distilling essential oils. Patent U.S.S.R. 77,136, Dec.31, 1949.

(GA 47 no.19:10181 '53)

16.3400

S/021/62/<sup>33750</sup>000/002/004/010  
D299/D304

AUTHOR: Kovtun, I. I.

TITLE: On a boundary-value problem for a linear system of second-order differential equations

PERIODICAL: Akademiya nauk UkrRSR. Dopovidi. no. 2, 1962, 157-160

TEXT: The asymptotic method developed by S. F. Feshchenko (Ref. 1: Doktorsk. diss. (Doctor's Thesis), K., 1950), permits finding the eigenvalues of the system of linear differential equations:

$$A(\tau, \varepsilon) \frac{d^2 y}{dt^2} + \varepsilon C(\tau, \varepsilon) \frac{dy}{dt} + B(\tau, \varepsilon) y = 0 \quad (1) \quad \checkmark$$

where  $y$  is an  $n$ -dimensional vector and  $A$ ,  $B$  and  $C$  are matrices of  $n$ -th order, with boundary conditions

Card 1/6

On a boundary-value ...

33750  
S/021/62/000/002/004/010  
D299/D304

$$a_1 Y'(1) + b_1 Y'(0) + a_0 Y(1) + b_0 Y(0) = 0$$

$$c_1 Y'(1) + d_1 Y'(0) + c_0 Y(1) + d_0 Y(0) = 0 \quad (2)$$

where  $a, b, c, d$  are constant matrices,  $Y$  is the fundamental matrix of the solutions of system (1),  $\tau = \xi t$ ,  $\xi^n = 1/\sqrt{\lambda}$  ( $\lambda$  being the eigenvalues). Boundary conditions (2) are a generalization of the regular conditions for a second-order differential equation. Three cases are considered (with respect to the values of  $a, b, c, d$ ). Conditions (2) are equivalent to

$$Y(0) = 0, \quad Y(1) = 0 \quad (6)$$

A particular solution to Eq. (1) is sought in the form

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33750

S/021/62/000/002/004/010

D299/D304

On a boundary-value ...

$$y_k(\tau) = [\mu_k(\tau) + \Pi^k(\tau, \varepsilon)] \zeta_k(\tau) \quad (k = 1, 2, \dots, n) \quad (7)$$

where  $\zeta_k$  is determined from

$$\frac{d\zeta_k}{dt} = [D^k(\tau, \varepsilon) + i\Omega^k(\tau, \varepsilon)] \zeta_k \quad (k = 1, 2, \dots, n) \quad (8)$$

It is assumed that the vector  $\Pi^k$  and the scalar functions  $D^k$  and  $\Omega^k$  can be expanded in series. The vectors  $\mu_k$  are determined from a system of algebraic equations. The obtained expressions make it possible to find the particular solution by successive approximations. The general solution of Eq. (1) is

Card 3/6

On a boundary-value ...

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D299/D304

$$Y = \alpha_1 Y_1 + \alpha_2 Y_2 \quad (14)$$

where  $Y_1$  is the fundamental matrix of the solutions for positive  $\Omega^k$ , and  $Y_2$  for negative  $\Omega^k$ . Substituting solution (14) in the boundary conditions (2), one obtains a system of algebraic equations for the constants  $\alpha$ . The determinant of this system, being equal to zero, yields a transcendental system of equations for  $\varepsilon$ . Thus one obtains  $\lambda = 1/\varepsilon^{2n}$ . For the boundary conditions (6), one obtains

$$\sin(\beta - \alpha) = 0, \quad \beta - \alpha = \pi k, \quad k = 1, 2, \dots$$

Card 4/6

On a boundary-value ...

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S/021/62/000/002/004/010  
D299/D304

$$\int_0^1 \Omega(\tau, \varepsilon) d\tau = \varepsilon \pi_k \quad (17)$$

Hence one obtains the zeroth approximation for  $\lambda$ :

$$\lambda_v = \left( \frac{\pi_k}{\int_0^1 \sqrt{\omega_v(\tau)} d\tau} \right)^{2n} \quad (v = 1, 2, \dots, n)$$

The other approximations can be readily obtained. Two examples are considered. There are 3 Soviet-bloc references.

Card 5/6

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D299/D304

On a boundary-value ...

ASSOCIATION: Instytut matematyki AN UkrRSR (Institute of Mathematics of the AS UkrRSR)

PRESENTED: by Academician Y. Z. Shtokalo of the AS UkrRSR

SUBMITTED: June 21, 1961

Card 6/6



16.6500  
16.3400

37903  
S/021/62/000/005/005/009  
D407/D301

AUTHOR: Kovtun, I.I.

TITLE: Determining eigenvalues of boundary-value problem for fourth-order differential equation

PERIODICAL: Akademiya nauk UkrRSR. Dopovidi, no. 5, 1962, 581-586

TEXT: An asymptotic method is proposed for determining the eigenvalues of the problem

$$F(u) = \lambda G(u) \quad (1)$$

$$U_{\mu}(u) = 0, \quad (2)$$

where

$$\left. \begin{aligned} F(u) &= \frac{d^4 u}{dz^4} + \frac{d}{dz} \left[ a(z) \frac{du}{dz} \right] + b(z)u \\ F(z) &= - \left[ \frac{d^4 u}{dz^4} + c(z)u \right] \end{aligned} \right\} \quad (3)$$

Card 1/3

Determining eigenvalues of ...

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D407/D301

with corresponding boundary conditions (4). The eigenvalues for problem (1)(2) were considered by E. Kanke (Ref. 1: Mathematische Zeitschrift, 46, 231, 1940). By a substitution, Eq. (3) passes into a equivalent system of type

$$\frac{dx}{dt} = (A_0(\tau) + \varepsilon A_1(\tau, \varepsilon))x, \quad (6)$$

where  $\tau = \varepsilon t = z$ ,  $\varepsilon = 1/\sqrt{\lambda}$ ;  $A_0$  and  $A_1$  are matrices. The asymptotic solution of equation (3) is sought in the form

$$x = U_1(\tau, \varepsilon)\xi_1 + U_2(\tau, \varepsilon)\xi_2, \quad (7)$$

where  $U_1$  and  $U_2$  are matrices and  $\xi_1$ ,  $\xi_2$  are two-dimensional vectors. These vectors are determined from a system of two differential equations. The constants, entering these equations, are determined from the boundary conditions. Four particular cases of boundary conditions are considered. 1)  $\cos \alpha \neq 0$ ,  $\cos \beta \neq 0$ ; in this case one obtains the asymptotic formula

Card 2/3 
$$\lambda_n = \pi^2 n^2 / T^2 - \frac{1}{T} \operatorname{tg} \alpha + \frac{1}{T} \operatorname{tg} \beta - \frac{1}{2T} \int_0^T a(\tau) d\tau.$$

Determining eigenvalues of ...

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D407/D301

Analogous asymptotic formulas are obtained for the other boundary conditions ( $\cos \alpha \neq 0$ ,  $\cos \beta = 0$ ;  $\cos \alpha = 0$ ,  $\cos \beta \neq 0$ ;  $\cos \alpha = 0$ ,  $\cos \beta = 0$ ).

ASSOCIATION: Instytut matematyki AN URSR (Institute of Mathematics of the AS UkrRSR)

PRESENTED: by Academician Y.Z. Shtokalo of the AS UkrRSR

SUBMITTED: September 20, 1961

Card 3/3

57528

16.4100  
16.2400

S/041/62/014/002/005/008  
B112/B108

AUTHOR: Kovtun, I. I.

TITLE: The question of the asymptotic solution of a linear operator differential equation

PERIODICAL: Ukrainskiy matematicheskiy zhurnal, v. 14, no. 2, 1962, 205-211

TEXT: The equation  $dx/dt = Ax + \epsilon F(t)x$  is formally solved by  $x = [Uve^{iRt} + Y(t)]\xi$ , where  $\xi$  is a formal solution of an equation  $d\xi/dt = \alpha\xi$ . The operator  $U$  transforms the operator  $A$  into an operator  $A_1 = U^{-1}AU$  of a certain normal form. The operator  $V$  transforms another normal operator  $B$  into an operator of diagonal form. Asymptotic solutions  $x_m$  are obtained by expansions

$\alpha = \sum_{k=0}^{\infty} \epsilon^k \alpha_k$ . The error  $\|x - x_m\|$  is estimated.

SUBMITTED: January 6, 1962, Kiyev  
Card 1/1

KOVTUN, I.I. (Kiyev)

Asymptotic solution to a certain linear operator differential  
equation. Ukr.mat.zhur. 14 no.2:205-211 '62. (MIRA 15:11)  
(Differential equations, Linear)

KOVTUN, I.I.

Some aspects of the asymptotic solution of an operator differential equation. Prikl. metod. resh. diff. urav. no.1833-39 '63  
(MIRA 18:2)

S/021/63/000/003/008/022  
D405/D301

AUTHOR: Kovtun, I. I.

TITLE: On solving an operator differential equation

PERIODICAL: Akademiya nauk UkrRSR. Dopovidi. no. 3, 1963, 322-324

TEXT: A method of solution is proposed for the equation

$$\frac{dx}{dt} = [A + \varepsilon F(t)] x \quad (1)$$

where  $x$  is a vector,  $\varepsilon$  a small parameter,  $A$  a bounded operator in Hilbert space, and  $F(t)$  an operator which can be represented as a convergent series of other operators. The proposed method is a combination of the projective method and of the asymptotic method developed by Y. Z. Shtokalo (Ref. 1: Lineynyye differentsial'nyye uravneniya s peremennymi koeffitsientami, K., 1960). The projective method (Galerkin's, the method of moments) is used for constructing the operators

Card 1/2

On solving an operator ...

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D405/D301

$$A_n = P_n A$$

( $P_n$  being the projection operators). Together with Eq. (1), one considers an equation in which  $A$  has been replaced by  $A_n$ . The sequence of solutions of this latter equation converges strongly to the solution of Eq. (1). Then the asymptotic method is used. This leads to the following asymptotic estimate for solving  $x$  of Eq. (1)

$$\|x - x_n^*\| \leq \frac{\|A - A_n\|N_1}{1 - M_1} + c_n \varepsilon^{n+1} = c'_n \varepsilon^{n+1} \quad (8)$$

ASSOCIATION: Instytut matematyki AN URSR (Institute of Mathematics of the AS UkrRSR)

PRESENTED: by Academician Y. Z. Shtokalo of the AS UkrRSR

SUBMITTED: March 3, 1962

Card 2/2



KOVTUN, I. M.

AUTHOR: Didorenko, I.A., Engineer and Kovtun, I.M., Candidate of Technical Sciences. 110-10-9/18

TITLE: Extension of the Sparkless Zone of Commutation of d.c. Machines. (Rasshireniye bezyskrovoy zony kommutatsii elektricheskikh mashin postoyannogo toka)

PERIODICAL: Vestnik Elektropromyshlennosti, 1957, Vol.28, No.10, pp. 47 - 48 (USSR)

ABSTRACT: In machines operating under sudden changes of load, problems of commutation are not yet resolved either in theory or in practice. The problem is becoming particularly important in view of plans for widespread electrification of the railways. Commutation is bad when the load changes suddenly because there is no compensation of the reactive e.m.f. of the inter-poles. Sparkless operation of a machine may be characterized by the area of the zone of sparkless commutation, which it is therefore very desirable to extend. The article describes verification of a new method of improving commutation by including semi-conductor rectifiers between parallel sections of a brush. In this way, it is possible to extend the sparkless zone by a factor of 1.5 - 2. The article gives the results of tests made on four machines of different size and in all cases the test results were in quantitative agreement.

Card 1/3

Extension of the Sparkless Zone of Commutation of d.c. Machines. 110-10-9/18

Curves taken without a rectifier are given in Fig. 1, whilst Figs. 2 and 3 show curves using a rectifier on a d.c. machine of 3 kW and 110 V manufactured in the Volta factory. When testing the machines without a rectifier the additional brush was connected to the main one so that the total brush width was the same in both cases. The machine was tested as a generator with shunt field at rated speed. It is concluded that the improvement of commutation by means of semi-conductors is worth attention. The methods should be most effective in a.c. commutator machines where, because of the presence of a transformer e.m.f. in the commutating sections, the uncompensated e.m.f. is greater and current rectification should improve matters appreciably. The magnitude of the uncompensated e.m.f. is relatively small and the rectified properties of selenium rectifiers are not so good at low voltages. Therefore, a still greater effect is to be expected if use is made of rectifiers that operate well at low voltage. This method of improving the commutation is easy to carry out particularly if use is made of small-sized germanium rectifiers which can easily be built into the machine or directly into a cut in the brush.

Card 2/3 There are 3 figures.

Extension of the Sparkless Zone of Commutation of d.c. Machines. 110-10-9/18

ASSOCIATION: The Voroshilovgrad Evening Engineering Institute  
(Voroshilovgradskiy Vecherniy Mashinostroitel'nyy  
Institut)  
The Kharkov Polytechnical Institute (Kharkovskiy  
Politekhnikheskiy Institut)

SUBMITTED: June 29, 1957.

AVAILABLE: Library of Congress  
Card 3/3

SIMIRENKO, Lev Platonovich [deceased]; SHEPEL'SKIY, A.I., kand. sel'-khoz. nauk, glav. red.; KOVTUN, I.M., kand. sel'khoz. nauk, zam. glav. red.; POSTYUK, A.V., zam. glav. red.; RODIONOV, A.P., doktor biol. nauk, zam. glav. red.; DEM'YANETS, Ye.F., starshiy nauchnyy sotr., red. toma; LISOVENKO, L.T., kand. biol. nauk, nauchnyy sotr., red. toma; NIKONENKO, M.N., kand. biol. nauk, red. toma; POSTOYUK, A.V., red.; DEREVIYANKO, G.S., tekhn. red.

[Pomology in three volumes; apple, pear, stone fruits] Pomologiya v trekh tomakh; iablonia, grusha, kostochkovye porody. Kiev, Izd-vo Ukrainskoi Akad. sel'khoz. nauk. Vol.1. [Apple] IAbлонia. 1961. 578 p. (MIRA 15:2)

1. Ukrainskiy nauchno-issledovatel'skiy institut sadovodstva (for Dem'yanets, Lisovenko).

(Apple---Varieties)

1. MOVTUN, I. F.
2. USSR (600)
4. Slag cement
7. Activated and plasticized concrete from blast furnace slags.  
steoi. prom. 30 no. 4, 1952  
Kand.Tekhn. Nauk Yuzhni
9. Monthly List of Russian Accessions, Library of Congress, August 1952.  
UNCLASSIFIED

KOVTUN, I.P., kandidat tekhnicheskikh nauk; IVANOV, O.M., kandidat tekhnicheskikh nauk; nauchnyy redaktor; ROSTVTSEVA, M.P., redaktor; SMOL'YAKOVA, M.V., tekhnicheskiy redaktor

[Activated and plasticized concrete on a base of blast furnace slags]  
Aktivirovannyi i plastifitsirovannyi beton na baze domennykh shlakov.  
Moskva, Gos. izd-vo lit-ry po stroitel'stvu i arkhitekture, 1954.  
37 p. (MIRA 8:4)

(Concrete) (Slag cement)

KOVTUN, I.P., kand.tekhn.nauk; RYABTSEVA, Yu.V., inzh.; DENISENKO, Z.Ya.

Wall materials made of activated coke slags. Sbor. trud. IUZHNII  
no.2:108-111 '59. (MIRA 13:9)

1. Yuzhnyy nauchno-issledovatel'skiy institut po stroitel'stvu.  
(Lightweight concrete)

KOVTUN, I.P., kand.tekhn.nauk; RYABTSEVA, Yu.V., inzh.; DENISENKO, Z.Ya.

Roofing tiles made of activated coke slags. Sbor. trud. IUZHNI  
no.2:136-138 '59. (MIRA 13:9)

1. Yuzhnyy nauchno-issledovatel'skiy institut po stroitel'stvu.  
(Tiles, Roofing) (Slag)



KOVTUN, I.P., kand.tekhn.nauk; TARASENKO, V.N., kand.tekhn.nauk;  
RYABTSEVA, Yu.V., mladshiy nauchnyy sotrudnik; DENISENKO,  
Z.Ya., master-instruktor

Activated air-entrained slag concrete. Stroi.mat. 5 no.9:35  
S '59. (MIRA 12:12)

(Lightweight concrete)

KOVTUN, Ivan Petrovich; LATASH, M.Ya., red.; SLIN'KO, B.I., red.;  
LEUSHCHENKO, N.L., tekhn. red.

[Activated mortars, concretes, and products made of blast-furnace slags] Aktivizirovannye rastvory, betony i izdeliia iz domennykh shlakov. Pod red. M.IA.Latasha. Kiev, Gosstroizdat, USSR, 1962. 134 p. (MIRA 16:2)  
(Slag) (Concrete) (Concrete reinforcement)

DYADECHKO, N.P.; ZHIGAYEV, G.N.; KOVTUN, I.V.

Eliminating perennial foci of the Colorado beetle. Zashch. rast.  
ot vred. i bol. 8 no.9:47 S '63. (MIRA 16:10)

1. Ukrainskiy nauchno-issledovatel'skiy institut zashchity  
rasteniy, Kiyev.

DYADECHKO, N.P., kand.biolog.nauk; KOVTUN, I.V., mladshiy nauchnyy sotrudnik

Controlling the Colorado beetle in self-sown potato fields.

Zashch. rast. ot vred. i bol. 8 no.5:49 My '63. (MIRA 16:9)

1. Ukrainskiy nauchno-issledovatel'skiy institut zashchity rasteniy,  
Kiyev.

(Ukraine--Potato beetle--Extermination)

KOVTUN, I.V., mladshiy nauchnyy sotrudnik

Harmfulness of the Colorado beetle. Zashch. rast. ot vred. i bol.  
9 no.3:47-48 '64. (MIRA 17:4)

1. Ukrainskiy nauchno-issledovatel'skiy institut zashchity rasteniy.

KOVTUN, I.Z.

VARTAPETOV, R.A., professor; KOVTUN, I.Z.; PUSTOVOYT, L.S.

Treating trichomonad colpitis with a product made from ramson.  
Akush. i gin. no.4:69-71 J1-Ag '55 (MLRA 8:11)

1. Iz kafedry akusherstva i ginekologii (zav.prof. R.A.Vartapetov)  
Vinnitskogo meditsinskogo instituta.  
(VAGINA, DIS.  
trichomoniasis, ther.)  
(THRICHOMONIASIS,  
vagina, ther.)

*Kovtun, K.*

TISHCHENKO, Yu., inzh.; KOVTUN, K., inzh.

Combined drying and firing in annular kilns. Stroi.mat. 3 no.11:  
24-25 N '57. (MIRA 10:12)  
(Brickmaking) (Kilns)

KOVTUN, K.; LYUBENKO, I.

Improve organisation work. Den.1 kred. 17 no.9:48-49  
S '59. (MIRA 12:12)  
(Cherkassy Province--Banks and banking)



KOVTUN, K.A. (Leningrad, Kirillovskaya ul., d.14, kv. 16)

Intraosseous azygography in cirrhosis of the liver with manifestations of portal hypertension. Vest. khir. 89 no.10:37-39  
O '62. (MIRA 17:10)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (zav. - prof. P.N. Napalkov) Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.

L 28318-66

ACC NR: AP6007170

SOURCE CODE: UR/0115/65/000/012/0067/0067

AUTHOR: Birshart, A. A.; Kovtun, K. P.

ORG: none

TITLE: Simple measuring circuit for an MT-6 thermoelectric manometer

SOURCE: Izmeritel'naya tekhnika, no. 12, 1965, 67

TOPIC TAGS: manometer, vacuummeter, vacuum measurement, gas pressure

ABSTRACT: The MT-6 thermoelectric manometer combined with a VSB-1 vacuummeter permits measuring air (or gas) pressure within  $\sim 4000$  newtons/m<sup>2</sup>. The vacuummeters, however, have been in short supply, they are complicated and expensive. Hence, a simplified electronic circuit is suggested to replace the above vacuummeter. The two-electron-tube circuit includes an a-f oscillator and operates on a bridge-compensating principle (circuit diagram is shown). Three or more MT-6 bulbs can be connected to the new circuit via a change-over switch. A calibration curve for dry air and nitrogen is given. Orig. art. has: 2 figures.

SUB CODE: 14, 09 / SUMM DATE: none

Card 1/1 CC

UDC: 681/2/084:531.787/8

KOVTUN, L., starshiy inzh. po tekhnike bezopasnosti; SECHENOV, A.

Readers' conference by correspondence. Okhr.truda i sots.strakh.  
5 no.4:31 Ap '62. (MIRA 15:4)

1. Ust'-Izhorskiy fanernyy zavod, Lena, stantsiya Pontonnaya (for  
Kovtun). 2. Predsedatel' komissii okhrany truda stroitel'no-mon-  
tazhnogo upravleniya No.9, g. Yevpatoriya (for Sechenov).  
(Industrial hygiene--Periodicals)

KOVTUN, L.F., inzh.

Concerning S.A. Komarov's article "Methods for calculating  
the sag curves of overhead power transmission lines." Elek.  
sta. 33 no.5:92-93 My '62. (MIRA 15:7)  
(Electric lines--Overhead)  
(Komarov, S.A.)

KOVCHIN, I.F., tech.

Construction of spur lines and turns of 110-330 kv. power transmission lines. Elek. sta. 36 no. 8:62-66 Ag '65.

(MIRA 18:8)

KOVTUN, L.F., inzh.

Determination of stretch in the wires of overhead power transmission  
lines during a break in the wires of the adjacent span. Elek. sta.  
35 no.6:54-58 Je '64. (MIRA 18:1)

VINOGRADOV, Ye.G., kand.tekhn.nauk; KOVTUN, L.I., inzh.

Safety clamping device for veneer peeling machines. Der.prom.  
10 no.12:25-26 D '61. (MIRA 14 '12)  
(Woodworking machinery--Safety appliances)

RUDENKO, N.P.; KOVTUN, L.V.

Compounds of germanium with 8-hydroxyquinoline. Trudy Kom.  
anal.khim. 14:209-217 '63. (MIRA 16:11)



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Ch. V. Safety when working with radioactive germanium -- 21

Bibliography -- 24

Card 2/2

KOVTUN, M.G.

less expensive than spraying. Zashch. rast. ot vred. i bol. 9  
no.6:10 '64 (MIRA 17:17)

1. Direktor Benderskogo mekhleskhosa, Moldavakaya SSR.

**COXTUN, M. S.**

**PROCESSES AND PROPERTIES INDEX**

Determination of ferrous and ferric oxides in slags of electric and open-hearth smelting. M. S. Kovtun. *Zavodskaya Lab.* 5, 1042-4(1930).—In the detn. of  $Fe^{2+}$  and  $Fe^{3+}$  by difference, the titration with  $K_2Cr_2O_7$  in the presence of  $PhNH$  as indicator by the Knop method (cf. C. A. 23, 3871), with and without substitution of  $NaHPO_4$  for  $H_2PO_4$ , gave more accurate results than that with  $KMnO_4$  by the Zimmermann-Reinhardt method. Sol. slags and ores are decompd. with  $HCl$  or  $H_2SO_4$ , and insol. ones with  $HF$  and  $HCl$  or  $H_2SO_4$  in  $CO_2$  atm. Insol. materials are powdered under abs. alc. C. B.

**ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION**

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<div style="position: relative;"> <span style="position: absolute; top: 10px; left: 10px; font-size: 2em; font-family: cursive;">BC</span> <div style="position: absolute; top: 10px; right: 10px; font-size: 1.5em;">B-I-5</div> <div style="text-align: center; margin-top: 50px;"> <p><b>APPLICATION OF THE MIXED INDICATOR METHYL-RED-METHYLENE-BLUE TO DETERMINATION OF NITROGEN IN STEEL.</b></p> <p><b>M.S. Kovtun (Zavod. Lab., 1937, 6, 229-231).--</b></p> <p><b>Titration of excess of <math>H_2SO_4</math> in Kjeldahl distillates is best effected by using the above indicator. (R.T.)</b></p> </div> </div>																			
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PROCESSES AND PROPERTIES INDEX																			
<div style="position: absolute; top: 10px; right: 10px; font-size: 2em; font-weight: bold;">B-1-4</div> <div style="position: absolute; top: 40%; left: 30%;"> <p><i>Determination of nitrogen in slag produced during electro-melting (of metals). M. B. Kortum (Zavod. Lab., 1939, 8, 93-95).—Dissolution of slag in HCl (1:1), with or without subsequent melting of the residue with KHSO<sub>5</sub>, gives val. for N which are too low, presumably because Al and Si nitrides remain unattacked. Dissolution in HCl must be followed by treatment of the residue with HF.</i></p> <p style="text-align: right;">1. B.</p> </div>																			
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3160-3169										3170-3179									
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1ST AND 2ND ORDERS		PROCESSES AND PROPERTIES INDEX		1ST AND 2ND ORDERS	
<p><i>Handwritten: 21</i></p> <p><b>Determination of carbon in ferrous metals, furnace dust, and slags.</b> <i>Handwritten: No 11</i>  <i>M. S. Koryun. Zashchita Lab 14.</i>            487 101(1048). For detg. C in ferrous metals, the flux PbO(CuO)Pb is used; it is prepd. by adding 50 g. calcined CuO to 100 g. molten Pb. This flux makes it possible to lower the temp. at which the metals are melted (C steel at 1000°, Cr-Ni-V steel at 1050°, and ferrochrome at 1200°). In detg. C in furnace dust and slags, the multiple combustion method was used. The gases from the first combustion were not absorbed in KOH soln but collected in a vessel which was connected to the measuring buret of the Wurtz app. The products from the second combustion are absorbed and in subsequent combustions a portion of the stored gas was used to dil. the gases. The last combustion was carried out after all the stored gas was used up and served as a control of the completeness of combustion. In detg. C in low-C Fe alloys, the C was first sepd. from the greater part of Fe by dissolving the Fe in K<sub>2</sub>CuCl<sub>4</sub> soln. The insol. residue was dried and calcined at 1100°. In high-C samples it is necessary to det. the residual C. <i>Handwritten: B. Z. Kamich</i></p> <p>Dnepropetrovsk Metallurgical Inst. im I. V. Stalin</p>					
<p>ASB-3LA METALLURGICAL LITERATURE CLASSIFICATION</p>					

KOVTUN, M. C. I OGORODNAYA, A. D.

27125

Kontrol' martenskikh shlakov po znacheniyu na vodnoy suspemzii. Zavodskaya laboratoriya,  
1949, No 8, S. 994-96

SO: LETOPIS' No. 34



5

25

PROCESSES AND PROPERTIES INDEX

THE CONTROL OF OPEN-HEARTH SLAGS ACCORDING TO THE pH VALUE OF THE AQUEOUS SUSPENSION. M. N. Kuvshin and A. D. Ugorodnyaya. (Zavodskaya Laboratoriya, 1949, vol. 15, Aug., pp. 994-996). [In Russian]. A method for the rapid estimation of the basicity of open-hearth slags is described in which the pH of an aqueous suspension of 250-300 mg. of the slag was compared with that of a buffer solution of known pH. The slag sample was crushed to pass through a 40-mesh sieve and shaken with 100 ml. of freshly distilled and reboiled water. After allowing to settle for 5 min., the pH was matched electrometrically with one of 12 buffer solutions with pH values ranging from 7.8 to 12.98. A linear relationship was found to exist between the basicity ( $\text{CaO}/\text{SiO}_2$ ) of the slag and pH of the suspension. The time of a basicity determination by this method was 20 min. - S. K.

K-58 0-4

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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LEV, I.Ye.; KOVTUN, M.S.; KHEYFETS, I.G.

Phase analysis of cast iron Ukr.khim.zhur. 21 no.5:655-660 '55.  
(MLRA 9:3)

1. Dnepropetrovskiy metallurgicheskiy institut imeni I.V. Stalina.  
(Cast iron--Analysis)

AUTHORS: Lev, I. Ye., Kovtun, M. S. SOV/163-58-1-53/53

TITLE: The Characteristic Properties of the Compound Phases of Malleable Hard Cast Iron (K kharakteristike svoystv fazovykh sostavlyayushchikh belogo chuguna)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 1, pp 279 - 283 (USSR)

ABSTRACT: The mechanism of the anodic processes of the fractional dissolution of ferrite or austenite, as well as the separation of cementite was discussed. It was suggested that the properties of the composition of phases of malleable hard cast iron should be investigated by means of an electrochemical method. This method makes it possible to observe the change in the anodic potential of ferrite and cementite in the hardened dies. The potential of cementite was found by the compensation method. The cementite sample was immersed in the electrolyte and acted as an anode. A platinum spiral served as the cathode. It was found that the potential difference between ferrite and cementite in relation to the composition of the electrolyte amounts to about 150 mV in a normal solution of  $\text{FeSO}_4$ , about 100 mV in a normal solution of HCl, and 50-60 mV in a normal

Card 1/2

The Characteristic Properties of the Compound Phases  
of Malleable Hard Cast Iron

SOV/163-58-1-53/53

solution of KCl.

The determination of the electrochemical potentials of the compound phases of malleable hard cast iron shows that the most suitable electrolyte for carbide analysis of malleable hard cast iron is the 0,3 HCl-solution.

By determining the potentials of every phase the proper electrolytes may be found for the phase analysis of diverse cast irons. There are 3 figures and 4 references, 3 of which are Soviet.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Metallurgical Institute)

SUBMITTED: October 1, 1957

Card 2/2

USCOMM-DC-60.786

18(7)

AUTHORS:

Lev, I. Ye., Kovtun, M. S.

SOV/163-58-4-45/47

TITLE:

Differential Carbide Analysis of White Pig-Iron  
(Differentsial'nyy karbidnyy analiz belogo chuguna)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958,  
Nr 4, pp 255-257 (USSR)

ABSTRACT:

It is possible to obtain a pig-iron in which the carbide phase consists only of a eutectic cementite, or of a eutectic and secondary cementite, and in which, after slow cooling, the perlite cementite is also present. The method of a differential carbide process is given here. Small plates measuring 8 by 30 by 60 mm were used. Each plate was cut into three equal parts. The first part served for precipitating all three kinds of cementite. This part was subjected to carbide analysis in its original state. From the second part, the secondary and the eutectic cementites were precipitated. This part was heated quickly up to 750° and quenched in a 10% NaOH solution. The third part was used for precipitating the eutectic cementite, and quenched at 1100° for this purpose. The carbides were precipitated in these specimens according to the method worked

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Differential Carbide Analysis of White Pig-Iron

SOV/163-58-4-45/47

out before (Ref 3). The data obtained were compared with the calculated carbide quantities. Calculation was carried out according to the lever principle (Ref 6). The method of differential carbide analysis worked out here was tested with white pig-iron specimens alloyed with chrome, nickel, silicon and aluminum. The data obtained are given. This method permits determination of the composition of eutectic, secondary and eutectoid cementite in the subeutectic white pig-iron. There are 2 tables and 7 references, 6 of which are Soviet.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut  
(Dnepropetrovsk Institute of Metallurgy)

SUBMITTED: November 4, 1957

Card 2/2

KOVTUN, M.S.

Thermofractionation method of determining nitrides in steel. Trudy  
kom.anal.khim. 10:205-214 '60. (MIRA 13:8)

1. Dnepropetrovskiy metallurgicheskiy institut, Dnepropetrovsk.  
(Nitrides) (Steel--Analysis)

S/032/62/028/003/002/0:7  
B127/B110

AUTHORS: Lev, I. Ye., and Kovtun, M. S.

TITLE: Determination of small cerium quantities in cast iron and steels

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 3, 1962, 273-274

TEXT: A rapid method of determining Ce in carbon-containing iron alloys is described. Ce is precipitated as oxalate at pH 5.5-7.0 with lanthanum oxalate as collector. Ce is coprecipitated with La in acid medium even with large excess of Fe, Al, or Mn. 1.0 g of steel or cast iron is dissolved in 30 ml HCl (1:3). The carbides are destroyed by dropping in  $\text{HNO}_3$  (1:40), and then 4 ml of 10 mg/ml  $\text{La}(\text{NO}_3)_3$  solution is added. In the case of cast iron, graphite and  $\text{SiO}_2$  are filtered off. 100 ml of saturated oxalic acid is added, the solution is heated and neutralized with  $\text{NH}_4\text{OH}$  (1:3) until turbidity sets in. After settling for 1 hr, the precipitation is filtered, dissolved in 5 ml of 1.0 M  $\text{H}_2\text{SO}_4$ , after addition

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Determination of small cerium...

S/052/62/028/003/002/017  
B127/B110

of one drop  $H_2O_2$  evaporated until  $SO_3$  vapors appear, 5 ml  $H_2O$  added, filtered, 25 ml of 20 %  $K_4P_2O_7 \cdot 3 H_2O$  solution and then 2 ml of 0.01 N  $KMnO_4$  added, filled up to 50 ml, and the intensity of coloring measured after 3 min with a ФЭК-M (FEK-M) colorimeter and a green light filter. The Ce content is determined with the aid of a calibration curve. There are 1 table and 8 references: 6 Soviet and 2 non-Soviet. The two references to English-language publications read as follows:  
W. Westwood, A. Mayer, Analyst, 73 (1948); T. Marple, E. Przybylowicz, D. Hume, Anal. Chem., 28, 12 (1956).

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Metallurgical Institute)

Card 2/2

KOVTUN, M.S.; KADINOV, Ye.I.

Methods of determining chromous oxide in slags during the electric  
smelting of stainless steel. Nauch. trudy DMI no.51:97-100 '63.  
(MIRA 17:10)

S/032/63/029/001/008/022  
B104/B186

AUTHORS: Kovtun, M. S., and Kadinov, Ye. I.

TITLE: Determination of chromium oxide in slags of electric stainless steel melts

PERIODICAL: Zavodskaya laboratoriya, v. 29, no. 1, 1963, 35

TEXT: The method is based on the dissolving a slag sample in a mixture of ferrous chloride, hydrochloric acid and hydrofluoric acid. In this process the ferrous chloride oxidizes the bivalent chromium and changes it to chromium chloride, which together with ferrous oxide can be titrated with potassium dichromate. From the content of ferrous oxide in the slag the content of chromium oxide can be calculated. 0.25 - 0.5g slag are dissolved in a 100 ml flask by 20 ml of a mixture which is prepared from 25 ml saturated ferrous oxide solution, 20 ml HF and 50 ml HCl (1.19) in a carbon dioxide stream. The solution is put into a 250 ml flask containing 50 ml cold water and 20 ml  $H_2SO_4$  (1 : 1) titrated with a 0.1 N solution of potassium dichromate in the presence of phenyl anthranilic acid and then the sum of the chromium and ferrous oxide content  
Card 1/2

Determination of chromium oxide in ...

S/032/63/029/001/008/022  
B104/B186

is calculated. To determine the ferrous oxide 0.2 g slag are dissolved in a platinum bowl by heating it in a mixture of 10 ml HCl (1.19), 5 ml HF and 10 ml  $H_2SO_4$  (1:1) until  $SO_3$  vapors separate. The salts are dissolved in 50 ml hot water. 20 ml of a 20% persulfuric acid solution are added, boiled 10 min and the iron is precipitated with ammonia. The ferrous hydroxide precipitate is filtered off, washed with water until a negative chromate-iron reaction with diphenylamin occurs, then dissolved in HCl (1:5), heated to  $50^{\circ}C$ . The solution is put into a 100 ml measuring flask to produce a sulfuric acid medium (5 ml  $H_2SO_4$  (1.84) added to 100 ml water). To 2-5 ml of the solution sampled from the measuring flask, 5 ml 30% sulfosalicylic acid and concentrated ammonia are added until the yellow coloring becomes stable! Water is added up to the filling mark, the sample is stirred and colorimtered with an  $\Phi SK-N$  (FEK-M) device provided with a blue filter. The chromium content in the slag is calculated from the difference.

ASSOCIATION: Dnepropetrovskiy metallurgicheskii institut  
(Dnepropetrovsk Institute of Metallurgy)

Card 2/2